

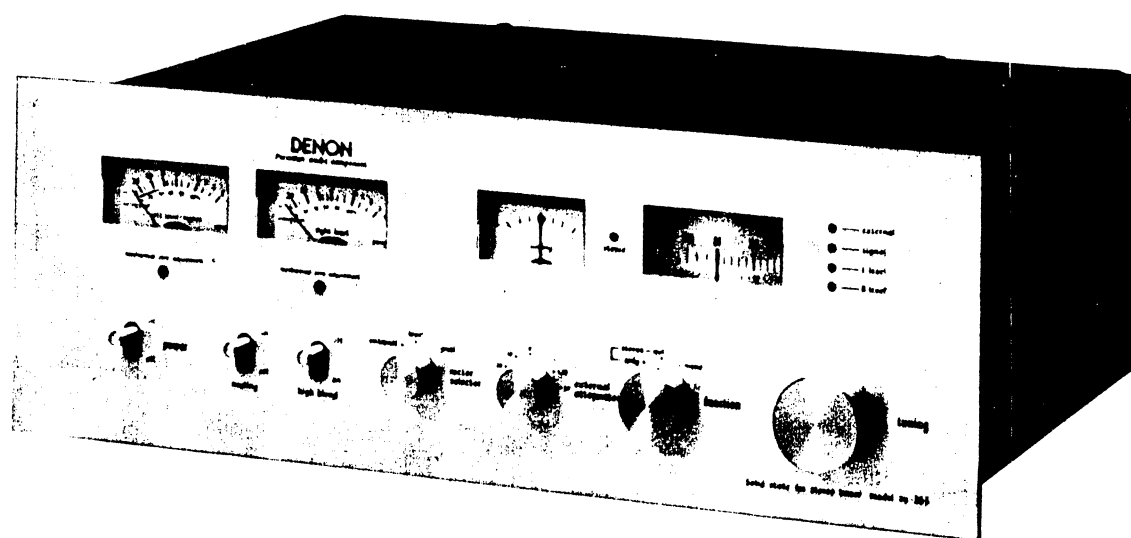
DENON

Hi-Fi FM Stereo/Tuner

SERVICE MANUAL

MODEL TU-355

SOLID STATE FM
STEREO TUNER



NIPPON COLUMBIA CO., LTD

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SPECIFICATIONS

CIRCUIT SYSTEM:	Super heterodyne
Tuning Range:	87.4 – 108MHz
Intermediate Frequency:	10.7MHz
Usable Sensitivity:	1.8 μ V (IHF)
Signal to Noise Ratio:	80dB
AM Suppression:	60dB
Capture Ratio:	1.0dB
Effective Selectivity:	85dB
Image Rejection:	120dB
IF Rejection:	110dB
Spurious Response:	110dB
Frequency Response:	20Hz–15kHz +0.2dB –1.5dB
Total Harmonic Distortion:	(MONO) 1kHz 0.15%, 50Hz–10kHz 0.3%
	(STEREO) 1kHz 0.2%, 50Hz–5kHz 0.4%
FM Stereo Separation:	1kHz 45dB 100Hz–10kHz 40dB
Carrier Leak (19kHz & 38kHz):	75dB
OUTPUT VOLTAGE	
Fixed Output (FIXED):	1.1V (100% modulation)
Output Impedance:	4.7 kohm
Variable Output (VARIABLE):	0–1.7V
Output Impedance:	1 kohm
LEVEL METERS	
Indication Error:	± 0.2 dB (EXT. INPUT –20–+30dB) 1kHz
Frequency Response:	20Hz–15kHz ± 0.5 dB

CONNECTOR TERMINALS:	Antenna (300 ohms, 75 ohms terminals & 750 ohms coaxial connector)
	Multi-path Detection
	Fixed Output (fixed)
	Variable Output (VARIABLE)
	Level Meter Inputs
OPERATION KNOBS:	Power Switch
	Function (STEREO ONLY, AUTO, MONO)
	Level Meter External Input Attenuator
	Tuning knob
	Muting
	Hi. Blend
	Meter Selector (EXTERNAL, LEVEL, SIGNAL)

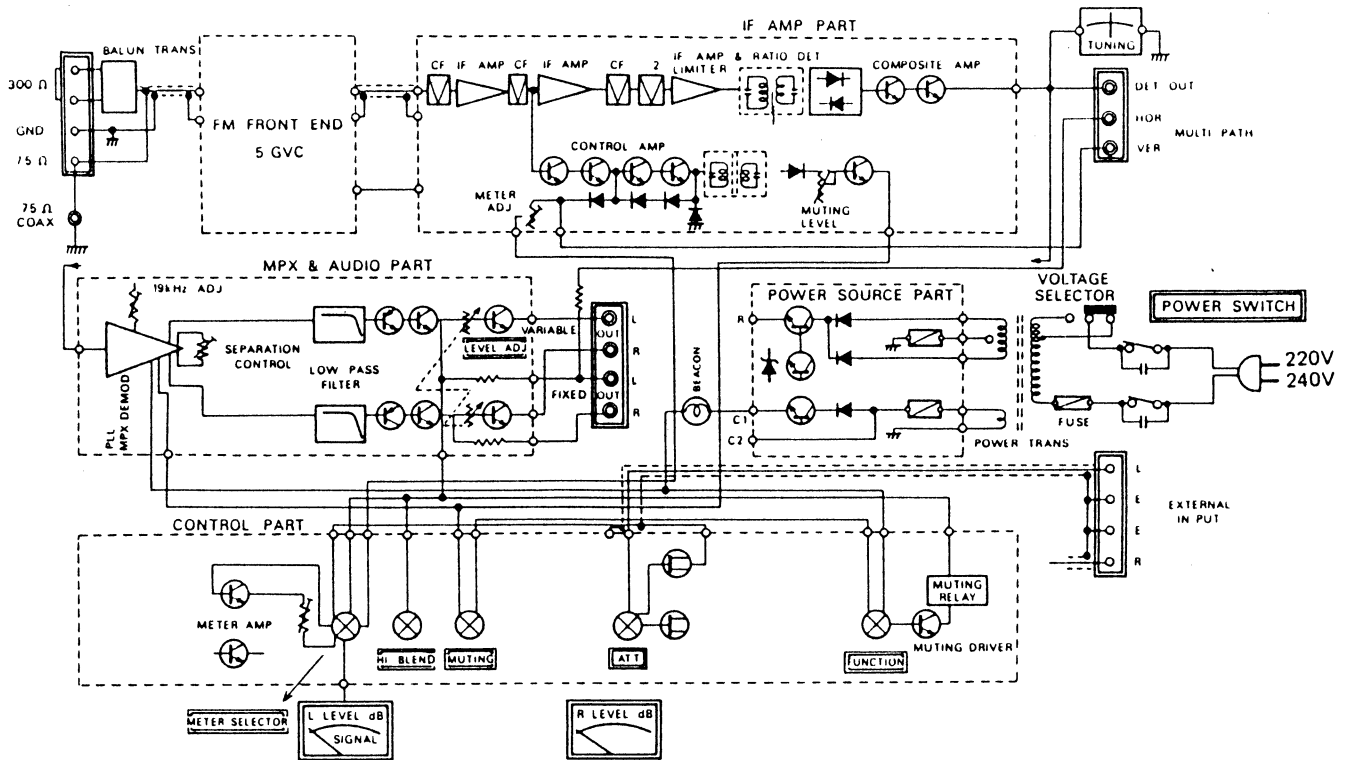
POWER REQUIREMENT: 220V/240V, 50Hz/60Hz (Internal switching)

POWER CONSUMPTION: 16W

DIMENSIONS: 396W x 147H x 281D (mm)

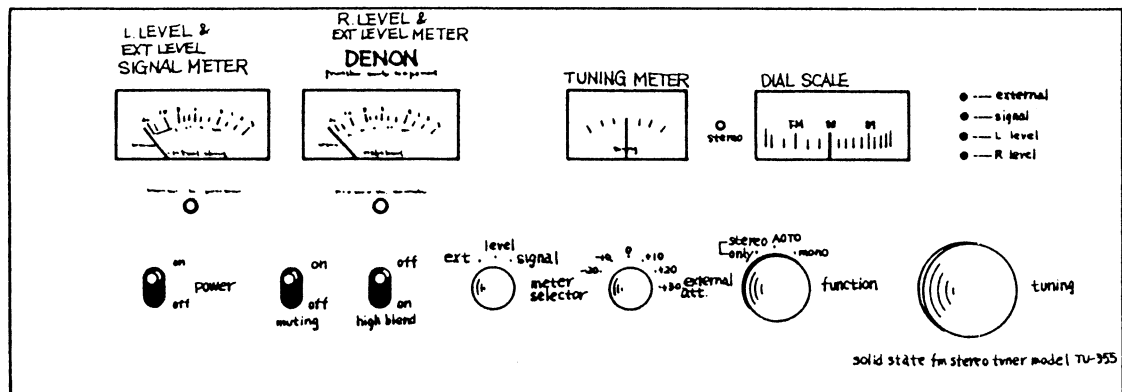
WEIGHT: 6.8kg.

BLOCK DIAGRAM

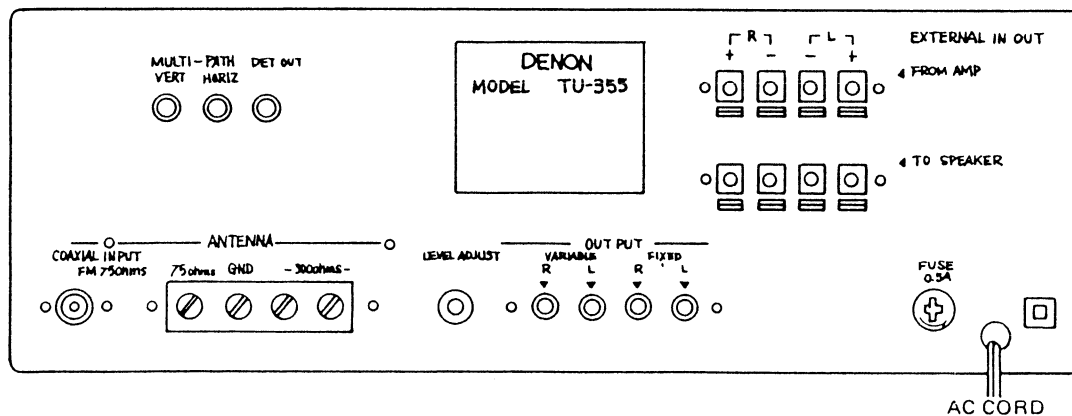


THE VIEW OF FRONT, BACK PANEL AND TOP, BOTTOM VIEW

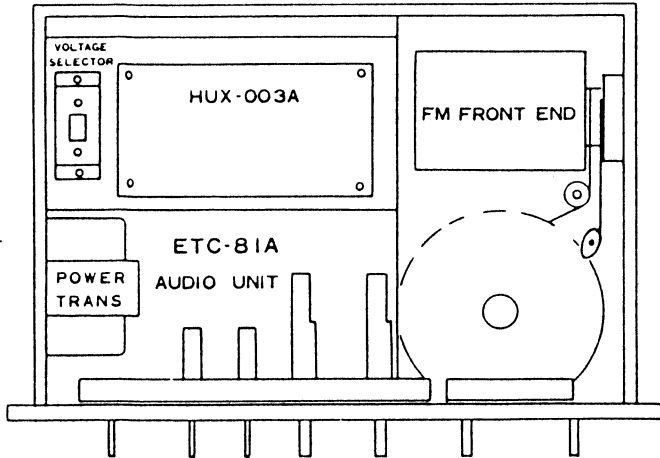
FRONT PANEL



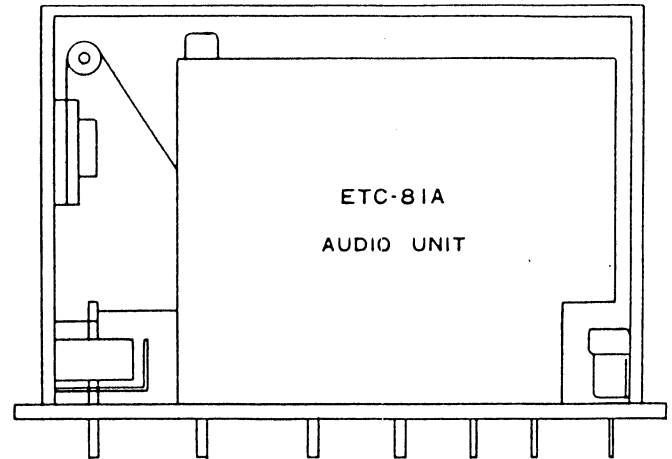
BACK PANEL



TOP VIEW

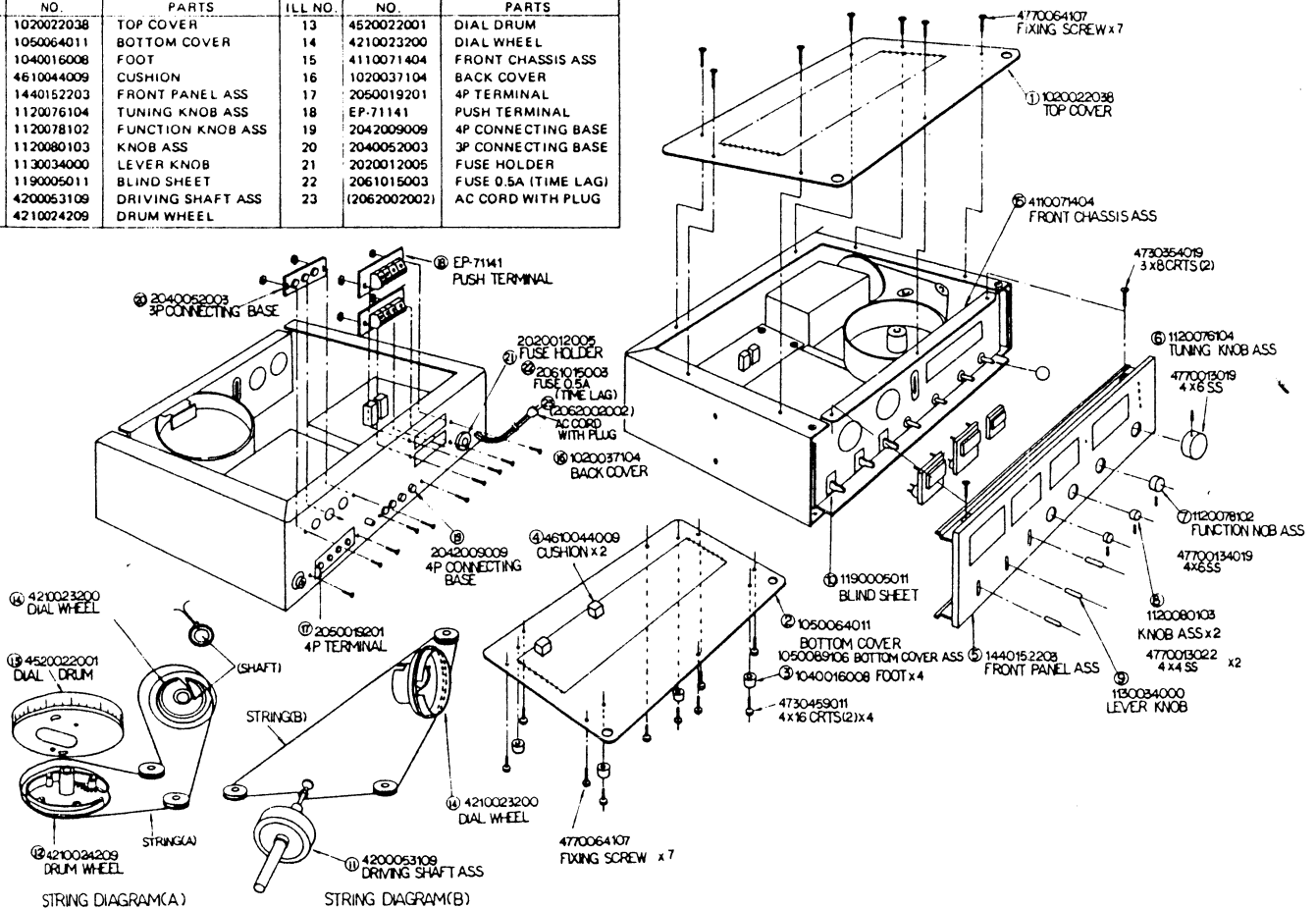


BOTTOM VIEW



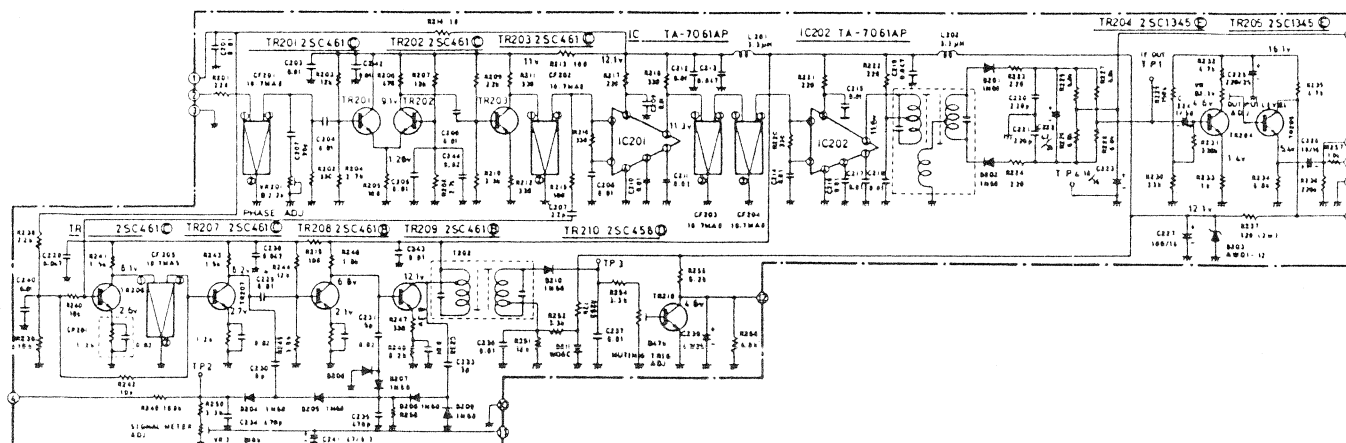
DISASSEMBLY INSTRUCTIONS

ILL NO.	NO.	PARTS	ILL NO.	NO.	PARTS
1	1020022038	TOP COVER	13	4520022001	DIAL DRUM
2	1050064011	BOTTOM COVER	14	4210023200	DIAL WHEEL
3	1040016008	FOOT	15	4110071404	FRONT CHASSIS ASS
4	4610044009	CUSHION	16	1020037104	BACK COVER
5	1440152203	FRONT PANEL ASS	17	2050019201	4P TERMINAL
6	1120076104	TUNING KNOB ASS	18	EP-71141	PUSH TERMINAL
7	1120078102	FUNCTION KNOB ASS	19	2042009009	4P CONNECTING BASE
8	1120080103	KNOB ASS	20	2040052003	3P CONNECTING BASE
9	1130034000	LEVER KNOB	21	2020012005	FUSE HOLDER
10	1190005011	BLIND SHEET	22	2061015003	FUSE 0.5A (TIME LAG)
11	4200053109	DRIVING SHAFT ASS	23	(2062002002)	AC CORD WITH PLUG
12	4210024209	DRUM WHEEL			

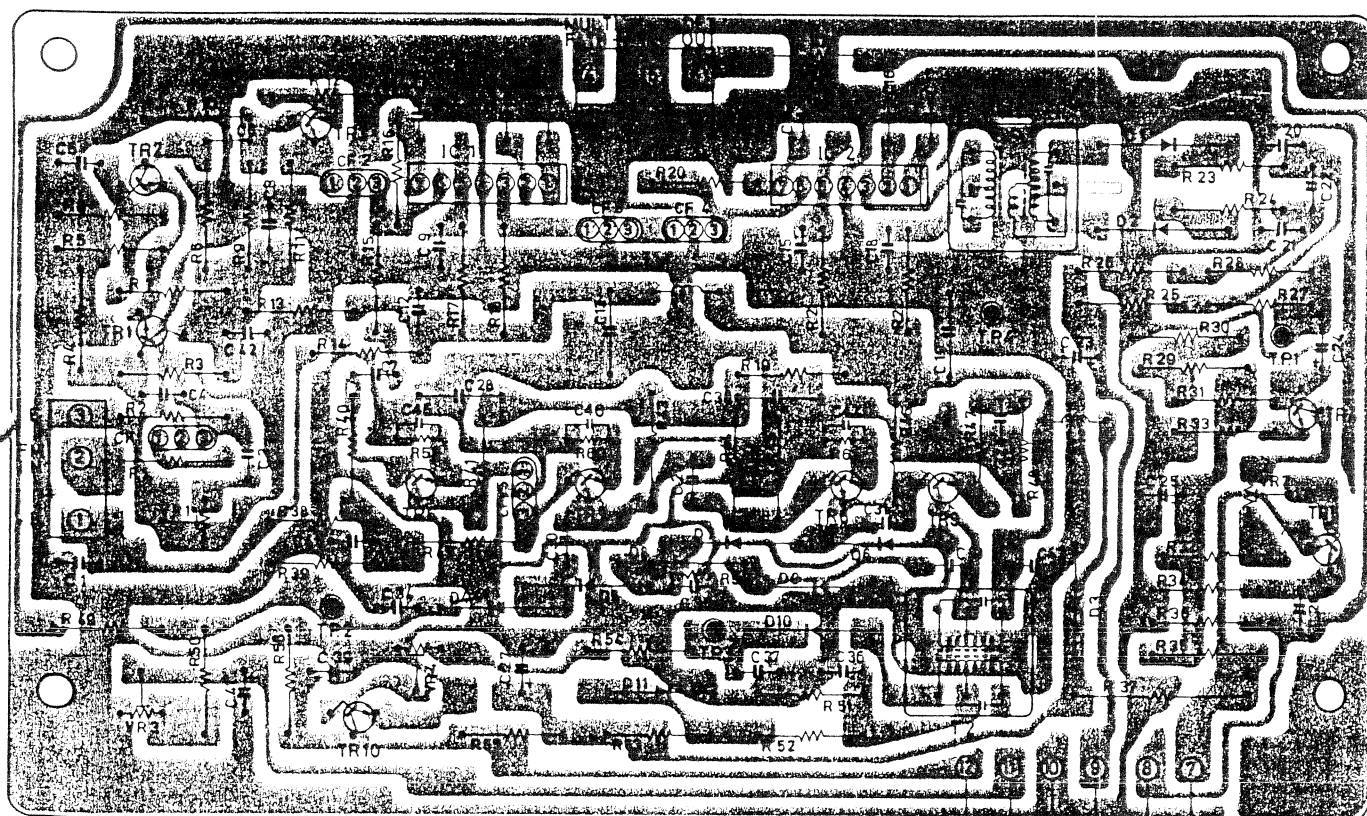


CIRCUIT DIAGRAM, PRINTED CIRCUIT BOARD PATTERN AND PARTS LIST
(THE BOARD DIAGRAM REPRESENTS THE VIEW FROM THE COPPER FOIL SIDE)

HUX-003A WIRING DIAGRAM



HUX-003A IF UNIT



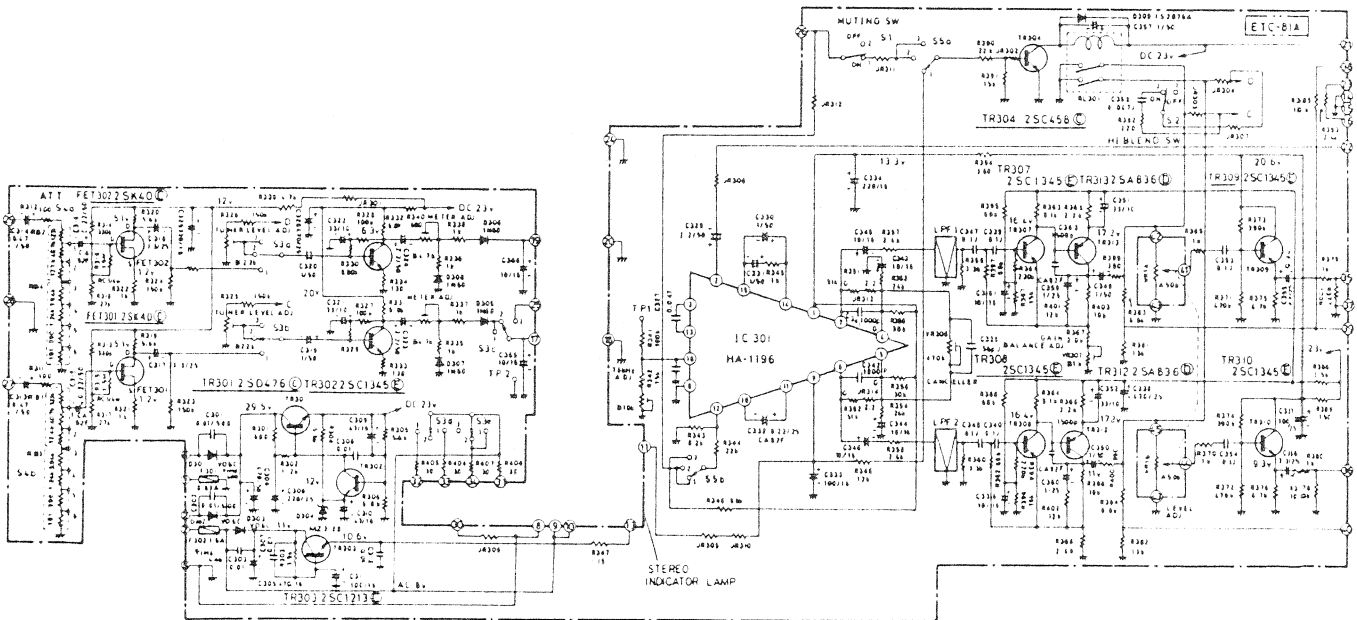
(BN)	MUTING OUT
(WT)	METER SELECTOR
(BK)	EARTH
(BU)	TUNING METER
OUT	DETECTOR OUT
(YW)	DC + 23 V
(RD)	

(BN) Muting Out
(WT) Meter Selector
(BK) Earth
(BU) Tuning Meter Out
(YV) Detector Out
(RD) DC + 23 V

HUX-003A IF UNIT PARTS LIST

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 29, 32, 36, 37, 40, 42, 43, 45, 46, 47	7531024016	CK45F1H103ZF	0.01 μ F 50V Ceramic Capacitor	R29	2410366015	RD1482E154JF	150 Kohm 1/4W Carbon Film Resistor
C2	7533652017	CC45SL1H 390KF	39PF \pm 10% 50V Ceramic Capacitor	R30	2410360018	RD1482E333JF	33 Kohm 1/4W Carbon Film Resistor
C7	7533649017	CC45SL1H220KF	22PF \pm 10% 50V Ceramic Capacitor	R31	2410374010	RD1482E334JF	330 Kohm 1/4W Carbon Film Resistor
C13, 19, 28, 38	7531026014	CK45F1H473ZF	0.047 μ F 50V Ceramic Capacitor	R32, 35	2410330012	RD1482E472JF	4.7 Kohm 1/4W Carbon Film Resistor
C20, 21	7533661011	CC45SL1H271KF	270PF \pm 10% 50V Ceramic Capacitor	R33	2410330012	RD1482E102JF	1.0 Kohm 1/4W Carbon Film Resistor
C22, 39	7544024016	CE04W1E4R7-F	4.7 μ F 25V Electrolytic Capacitor	R36	2410370014	RD1482E224JF	220 Kohm 1/4W Carbon Film Resistor
C22, 26	7544015012	CE04W1C100-F	10 μ F 16V Electrolytic Capacitor	R37	2440087018	RS1483D121JNBF	120 Ohm \pm 5% 2W Metal Oxide Film Resistor
C24	7544044012	CE04W1H1010-F	10 μ F 50V Electrolytic Capacitor	R39, 40, 42	2410338014	RD1482E103JF	10 Kohm \pm 5% 1/4W Carbon Film Resistor
C25	7544029011	CE04W1E221-F	220 μ F 25V Electrolytic Capacitor	57			
C27	7544018019	CE04W1C101-F	100 μ F 16V Electrolytic Capacitor	R41, 43	2410318018	RD1482E152JF	1.5 Kohm 1/4W Carbon Film Resistor
C30	7533599015	CC45SL1H060DF	6PF \pm 0.5PF 50V Ceramic Capacitor	R45	2410328011	RD1482E382JF	3.9 Kohm 1/4W Carbon Film Resistor
C31	7533598016	CC45SL1H050DF	5PF \pm 0.5PF 50V Ceramic Capacitor	R46, 55	2410320019	RD1482E182JF	1.8 Kohm 1/4W Carbon Film Resistor
C33	7533596018	CC45SL1H030CF	3PF \pm 0.25PF 50V Ceramic Capacitor	R49	2410336016	RD1482E822JF	8.2 Kohm 1/4W Carbon Film Resistor
C34, 35	7533665017	CC45SL1H471KF	470PF \pm 10% 50V Ceramic Capacitor	R58	2410362019	RD1482E104JF	100 Kohm 1/4W Carbon Film Resistor
C41	7544002012	CE04W0J470-F	47 μ F 6.3V Electrolytic Capacitor	R59, 60, 61	2410338001	RD1482E103J	10 Kohm 1/4W Carbon Film Resistor
R1, 17, 21, 22, 23, 24	2410298015	RD1482E221JF	220 Ohm \pm 5% 1/4W Carbon Film Resistor	VR1	2410316007	RD1482E122J	1.2 Kohm 1/4W Carbon Film Resistor
R2, 11, 12, 16, 18, 20, 47	2410307011	RD1482E331JF	330 Ohm \pm 5% 1/4W Carbon Film Resistor	VR2	2220211101	P.C. Board	
R3, 7, 44, 51, 53	7410340015	RD1482E123JF	12 Kohm \pm 5% 1/4W Carbon Film Resistor	VR3	EP 5462H10	Solid Volume	B-2.2 Kohm Variable Resistor
R4, 8	7410324015	RD1482E272JF	2.7 Kohm 1/4W Carbon Film Resistor	VR4	EP 5462H13	Solid Volume	B-3.3 Kohm Variable Resistor
R5	7410296017	RD1482E181JF	180 Ohm 1/4W Carbon Film Resistor		EP 5462H17	Solid Volume	B-10 Kohm Variable Resistor
R6	7410306017	RD1482E471JF	470 Ohm 1/4W Carbon Film Resistor		2220211101	P.C. Board	B-47 Kohm Variable Resistor
R9, 38	7410346019	RD1482E223JF	22 Kohm 1/4W Carbon Film Resistor		2040031011	3P Connector Ass	Printed Circuit Board
R10, 50, 52, 54	2410326013	RD1482E332JF	3.3 Kohm 1/4W Carbon Film Resistor	T1	2312001009	Ratio Trans Ass	
R13, 15, 19	2410290013	RD1482E101JF	100 Ohm 1/4W Carbon Film Resistor	T2	2312002105	FM IFT Ass	
R14	2410266018	RD1482E100JF	10 Ohm 1/4W Carbon Film Resistor	CF1, 2, 3, 4, 5	2610006007	Ceramic Filter	10.7 MHz Ceramic Filter
R25, 26, 27, 28, 34, 56	7410334018	RD1482E682JF	6.8 Kohm 1/4W Carbon Film Resistor	L1, 2	TRT-09956	Inductor	3.3 μ H Inductor
				IC1, 2	2630019029	TA 7061AP	Integrated Circuit
				TR1, 2, 3, 6, 7	2730025073	2SC461 (C)	Transistor
				TR4, 5	2730116013	2SC1345 (E)	Transistor
				TR8, 9	2730025010	2SC461 (B)	Transistor
				TR10	2730021043	2SC458 (D)	Transistor
				D1, 2, 4, 5, 6, 7, 8, 9, 10	2760002029	IN60	Diode
				D3	2760065008	AW01 12	Diode
				D11	2760158025	W06C	Diode

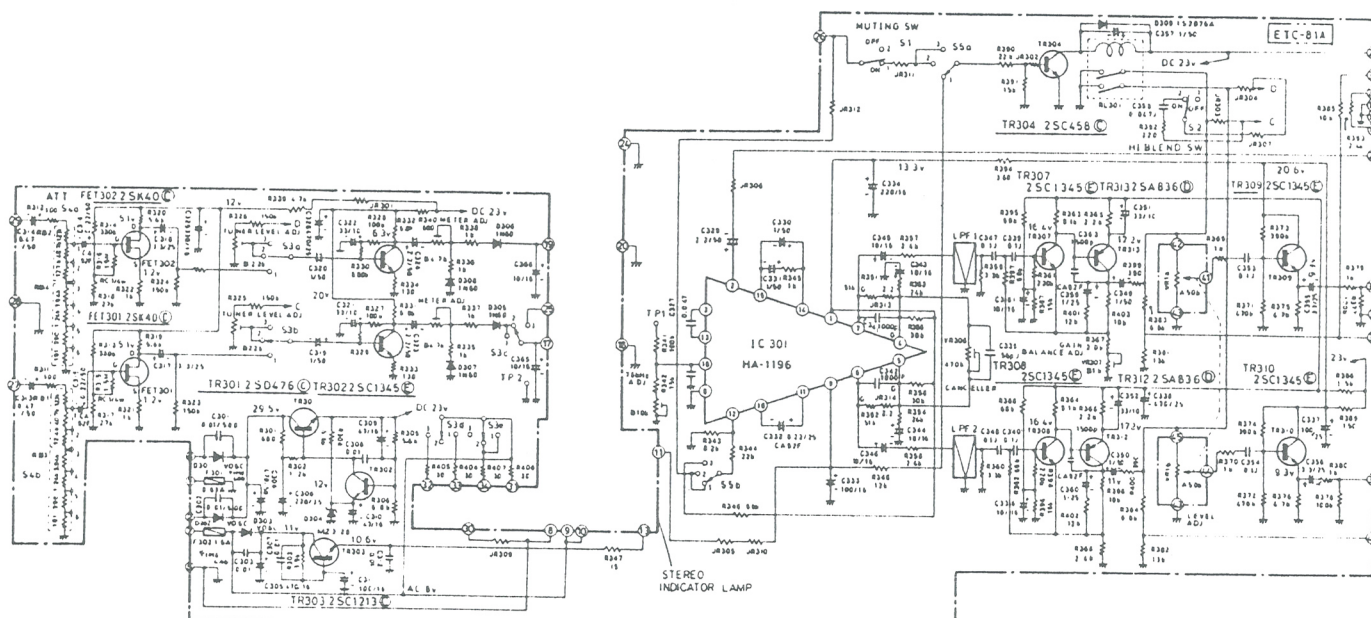
ETC-81 WIRING DIAGRAM



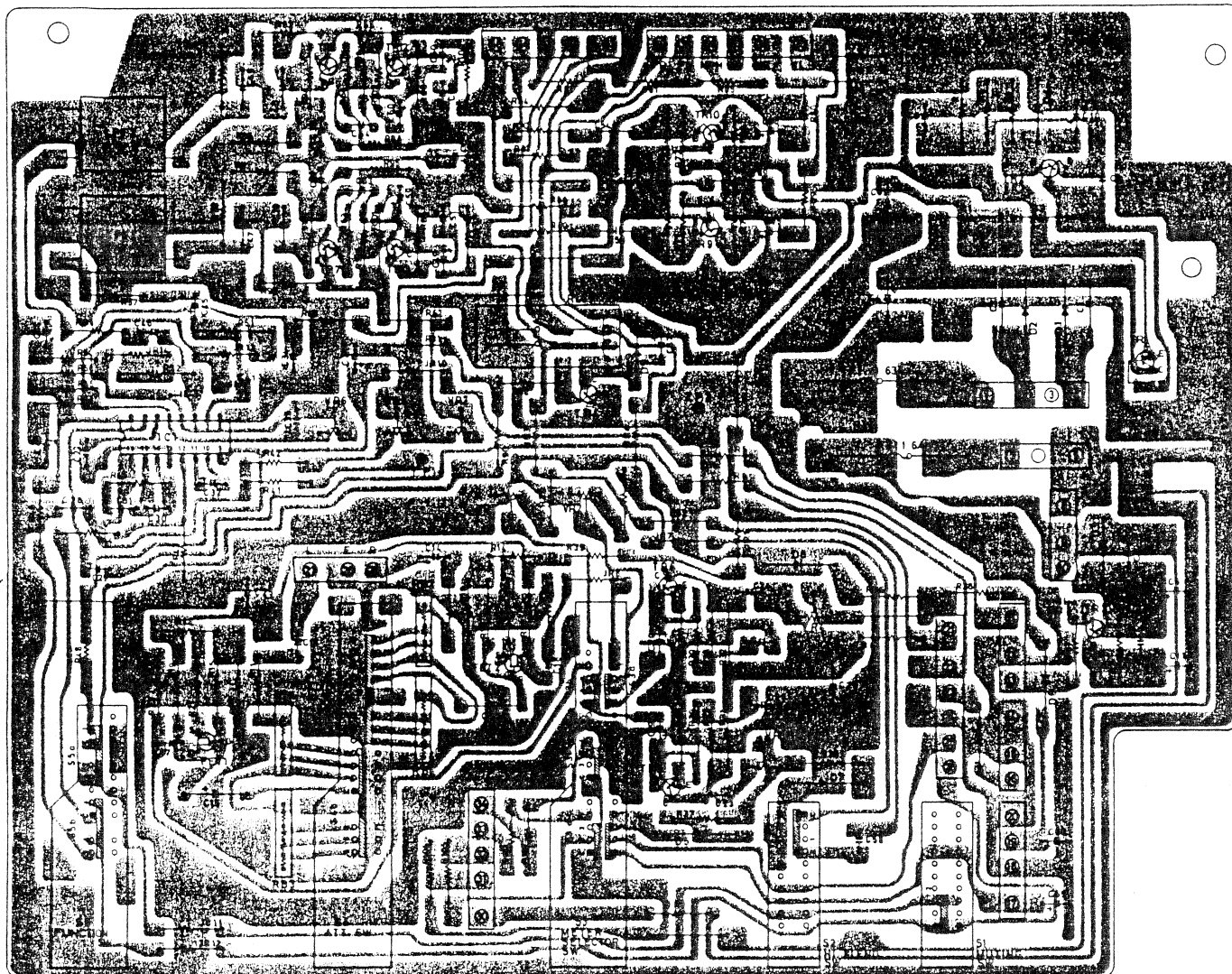
HUX-003A IF UNIT PARTS LIST

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 29, 32, 36, 37, 40, 42, 43, 45, 46, 47	2531024016	CK45F1H103ZF	0.01µF 50V Ceramic Capacitor	R29	2410366015	RD1482E154JF	150 Kohm 1/4W Carbon Film Resistor
C2	2533652017	CC45SL1H 390KF	39PF ±10% 50V Ceramic Capacitor	R30	2410350018	RD1482E 333JF	33 Kohm 1/4W Carbon Film Resistor
C7	2533649017	CC45SL1H220KF	22PF ±10% 50V Ceramic Capacitor	R31	2410374010	RD1482E 334JF	330 Kohm 1/4W Carbon Film Resistor
C13, 19, 28, 38	2531026014	CK45F1H473ZF	0.0047µF 50V Ceramic Capacitor	R32, 35	2410330012	RD1482E 472JF	4.7 Kohm 1/4W Carbon Film Resistor
C20, 21	2533661011	CC45SL1H271KF	270PF ±10% 50V Ceramic Capacitor	R33	2410314012	RD1482E102JF	1.0 Kohm 1/4W Carbon Film Resistor
C22, 39	2544024016	CE04W1E1407 F	4.7µF 25V Electrolytic Capacitor	R34	2410370014	RD1482E224JF	220 Kohm 1/4W Carbon Film Resistor
C23, 26	2544015012	CE04W1C100 F	10µF 16V Electrolytic Capacitor	R36	2440087018	RS14830121JNBF	120 Ohm ±5% 2W Metal Oxide Film Resistor
C24	2544044012	CE04W1H010 F	1µF 50V Electrolytic Capacitor	R37	2440338014	RD1482E103JF	10 Ohm ±5% 1/4W Carbon Film Resistor
C25	2544029011	CE04W1E1221 F	220µF 25V Electrolytic Capacitor	R39, 40, 42	57		
C27	2544018019	CE04W1C101 F	100µF 16V Electrolytic Capacitor	R41, 43	2410318018	RD1482E152JF	15 Kohm 1/4W Carbon Film Resistor
C30	2533595015	CC45SL1H060DF	6PF ±0.5PF 50V Ceramic Capacitor	R45	2410328011	RD1482E 392JF	39 Kohm 1/4W Carbon Film Resistor
C31	2533598015	CC45SL1H050DF	5PF ±0.5PF 50V Ceramic Capacitor	R46	2410320019	RD1482E182JF	18 Kohm 1/4W Carbon Film Resistor
C33	2533596018	CC45SL1H030CF	3PF ±0.25PF 50V Ceramic Capacitor	R48, 55	2410336016	RD1482E822JF	8.2 Kohm 1/4W Carbon Film Resistor
C34, 35	2533665017	CC45SL1H471KF	470PF ±10% 50V Ceramic Capacitor	R49	2410362019	RD1482E104JF	100 Kohm 1/4W Carbon Film Resistor
C41	2544002012	CE04WJ0470 F	47µF 6.3V Electrolytic Capacitor	R58	2410338001	RD1482E103J	10 Kohm 1/4W Carbon Film Resistor
R1, 17, 21, 22, 23, 24 R2, 11, 12, 16, 18, 20, 47	2410298015	RD1482E 221JF	220 Ohm ±5% 1/4W Carbon Film Resistor	RS9, 60, 61	2410316007	RD1482E122J	1.2 Kohm 1/4W Carbon Film Resistor
R3, 7, 44, 51, 53	2410302011	RD1482E 331JF	330 Ohm ±5% 1/4W Carbon Film Resistor	VR1	EP 5462H9	Solid Volume	B-2.2 Kohm Variable Resistor
R4, 8	2410324015	RD1482E 272JF	2.7 Kohm 1/4W Carbon Film Resistor	VR2	EP 5462H10	Solid Volume	B-3.3 Kohm Variable Resistor
R5	2410296017	RD1482E181JF	180 Ohm 1/4W Carbon Film Resistor	VR3	EP 5462H13	Solid Volume	B-10 Kohm Variable Resistor
R6	2410306017	RD1482E 471JF	470 Ohm 1/4W Carbon Film Resistor	VR4	EP 5462H17	Solid Volume	B-47 Kohm Variable Resistor
R9, 38	2410346019	RD1482E 223JF	22 Kohm 1/4W Carbon Film Resistor		2202211101	P.C Board	Printed Circuit Board
R10, 50, 52, 54	2410326013	RD1482E 332JF	33 Kohm 1/4W Carbon Film Resistor		2040031011	6P Connector Ass	
R13, 15, 19 R14	2410290013	RD1482E101JF	100 Ohm 1/4W Carbon Film Resistor		2034013003	3P Connector Pin Ass	
R25, 26, 27, 28, 34, 56	2410266018	RD1482E100JF	10 Ohm 1/4W Carbon Film Resistor	T1	2312001009	Ratio Trans Ass	
	2410334018	RD1482E 682JF	68 Kohm 1/4W Carbon Film Resistor	T2	2312002105	FM IFT Ass	
				CF1, 2, 3, 4, 5	2610006007	Ceramic Filter	10.7 MHz Ceramic Filter
				L1, 2	TRT 09956	Inductor	3.3µH Inductor
				IC1, 2	263009029	TA 7061AP	Integrated Circuit
				TR1, 2, 3, 6, 7	2730025023	2SC461 (C)	Transistor
				TR4, 5	2730116013	2SC1345 (E)	Transistor
				TR8, 9	2730025010	2SC461 (B)	Transistor
				TR10	2730021043	2SC458 (D)	Transistor
				D1, 2, 4, 5, 6, 7, 8, 9, 10	2760002029	1N60	Diode
				D3	2760006508	AW01 12	Diode
				D11	2760158025	W06C	Diode

ETC-81 WIRING DIAGRAM

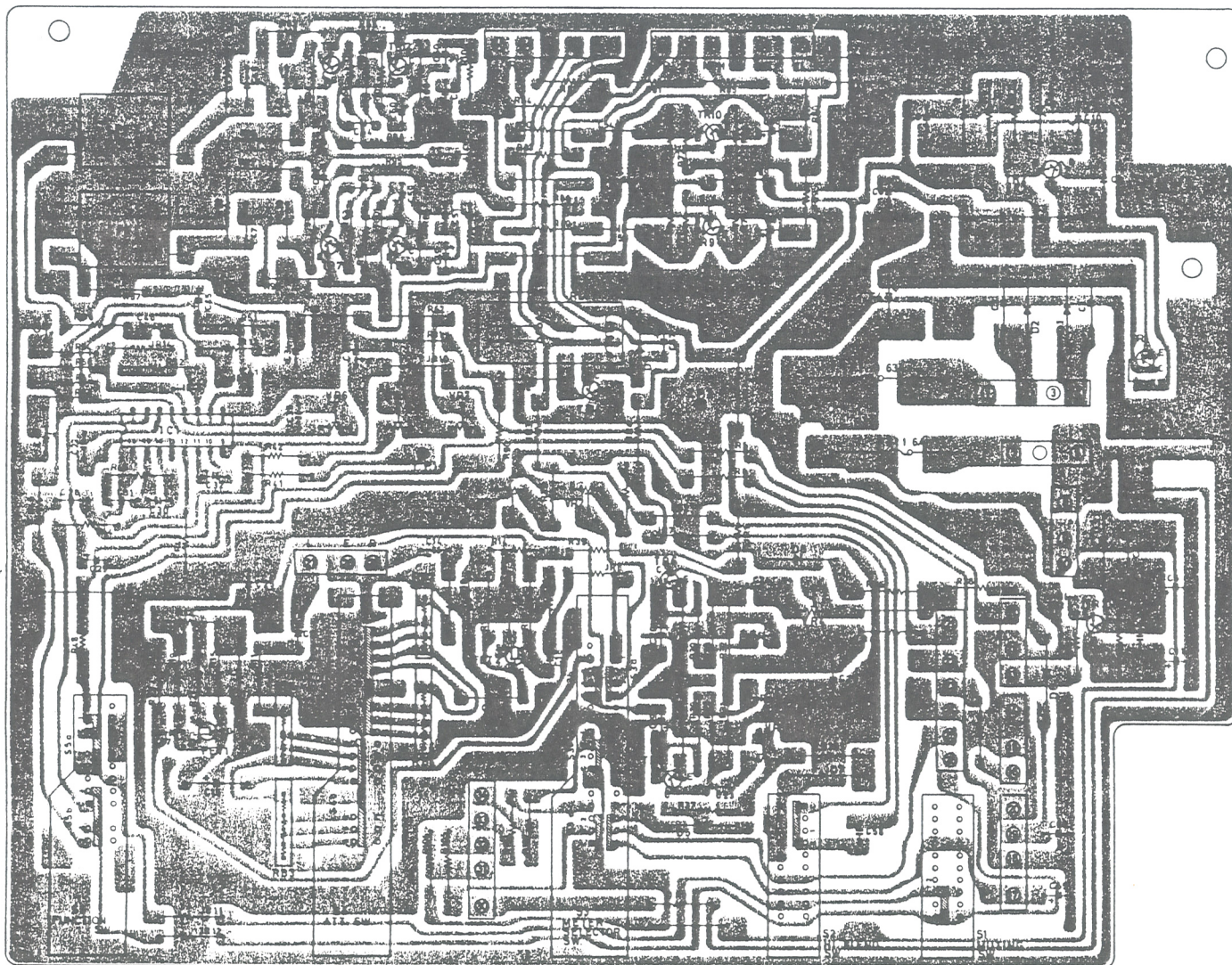


ETC-81 AUDIO AMP UNIT



ETC-81 AUDIO UNIT PARTS LIST

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C1 2	2531053016	CK45E2H103PF	0.01μF 500V Ceramic Capacitor	R23, 24, 25, 26	2410366015	RD14B2E154JF	150 Kohm:5% 1/4W Carbon Resistor
C3, 7, 8, 12	2531074016	CK45F1H103ZF	0.01μF 50V Ceramic Capacitor	R27, 28, 41	2410362019	RD14B2E104JF	100 Kohm:5% 1/4W Carbon Resistor
C4	2544053016	CE04W1C471-F	470pF 50V Electrolytic Capacitor	R29, 30	2410253018	RD14B2H684JF	680 Kohm:5% 1/2W Carbon Resistor
C5	2544071018	CE04W1C471-F	470pF 50V Electrolytic Capacitor	R33, 34	2410293010	RD14B2E131JF	130 Ohm:5% 1/4W Carbon Resistor
C6	2544039014	CE04W1V221-F	220μF 35V Electrolytic Capacitor	R39, 75, 76	2410330012	RD14B2E472JF	4.7 Kohm:5% 1/4W Carbon Resistor
C9, 10	2544017010	CE04W1C470-F	47pF 16V Electrolytic Capacitor	R42, 87, 91	2410342013	RD14B2E153JF	15 Kohm:5% 1/4W Carbon Resistor
C11, 33	2544018019	CE04W1C101-F	100pF 16V Electrolytic Capacitor	R43	2410336016	RD14B2E822JF	8.2 Kohm:5% 1/4W Carbon Resistor
C13, 14	2544043013	CE04W1HR47-F	0.47μF 50V Electrolytic Capacitor	R44, 90	2410346019	RD14B2E223JF	22 Kohm:5% 1/4W Carbon Resistor
C15, 16	2551103014	CQ93M1H224MF	0.22μF:20% 50V Plastic Film Capacitor	R46, 62, 88, 95, 97	2410358010	RD14B2E683JF	68 Kohm:5% 1/4W Carbon Resistor
C17, 18, 55	2544073017	CE04W1E3R3-F	3.3μF 25V Electrolytic Capacitor	R47	2410270017	RD14B2E150JF	15 Ohm:5% 1/4W Carbon Resistor
C19, 20, 30, 31, 49, 50, 57	2544044012	CE04W1H010-F	1μF 50V Electrolytic Capacitor	R48, 101, 102	2410340015	RD14B2E123JF	12 Kohm:5% 1/4W Carbon Resistor
C21, 22, 51, 52	2544008016	CE04W1A330-F	33μF 10V Electrolytic Capacitor	R49	2410303010	RD14B2E361JF	360 Ohm:5% 1/4W Carbon Resistor
C23, 24, 29	2544055001	CE04W1H2R2-F	2.2μF 50V Electrolytic Capacitor	R51, 52	2412012019	RD14B2E513G	51 Kohm:2% 1/4W Carbon Resistor
C25	2544020010	CE04W1C331-F	330pF 16V Electrolytic Capacitor	R53, 54	2410347018	RD14B2E243JF	24 Kohm:5% 1/4W Carbon Resistor
C26, 36	2544031012	CE04W1E471-F	470μF 25V Electrolytic Capacitor	R55, 56	2410349011	RD14B2E303JF	30 Kohm:5% 1/4W Carbon Resistor
C27	2551080014	CQ93M1H473KF	0.047μF:20% 50V Plastic Film Capacitor	R57, 58, 68	2410323016	RD14B2E242JF	2.4 Kohm:5% 1/4W Carbon Resistor
C28	2550291008	CQ05S1H471J	470PF:15% 50V Plastic Film Capacitor	R93	2410326013	RD14B2E332JF	3.3 Kohm:5% 1/4W Carbon Resistor
C32	2545016010	CA92F1ER22MF	0.22μF:20% 25V Aluminum Solid Electrolytic Capacitor	R59, 60	2410370014	RD14B2E224JF	220 Kohm:5% 1/4W Carbon Resistor
C34	2544019018	CE04W1C221-F	220pF 16V Electrolytic Capacitor	R61, 94	2410337015	RD14B2E912JF	9.1 Kohm:5% 1/4W Carbon Resistor
C35	25533621019	CE04B5L1H560JF	560PF:10% 50V Ceramic Capacitor	R65, 66	2410322017	RD14B2E222JF	2.2 Kohm:5% 1/4W Carbon Resistor
C36, 43, 44, 45, 46, 61	2544015012	CE04W1C100-F	10pF 16V Electrolytic Capacitor	R67	2410321018	RD14B2E202JF	2.0 Kohm:5% 1/4W Carbon Resistor
C37	2544028012	CE04W1E101-F	100μF 25V Electrolytic Capacitor	R71, 72	2410378016	RD14B2E474JF	470 Kohm:5% 1/4W Carbon Resistor
C39, 40, 47, 48, 53, 54	2551130045	CQ93M1H104JF	0.1μF:15% 50V Plastic Film Capacitor	R73, 74	2410376018	RD14B2E394JF	390 Kohm:5% 1/4W Carbon Resistor
C41, 42	2554076009	CQ92P2A102G	0.001μF:12% 100V Plastic Film Capacitor	R81, 82	2410341014	RD14B2E133JF	13 Kohm:5% 1/4W Carbon Resistor
C58	2551130003	CQ93M1H473JF	0.047μF:15% 50V Plastic Film Capacitor	R85, 98, 103	2410338014	RD14B2E103JF	10 Kohm:5% 1/4W Carbon Resistor
C59, 60	2545020019	CA92F1E010MF	1μF:20% 25V Aluminum Solid Electrolytic Capacitor	R86	2410318018	RD14B2E152JF	15 Kohm:5% 1/4W Carbon Resistor
C63, 64	2551120026	CQ93M1H152J	0.0015μF:5% 50V Plastic Film Capacitor	R89	2410294019	RD14B2E151JF	150 Ohm:5% 1/4W Carbon Resistor
C65, 66	2544015009	CE04W1C100-F	10pF 16V Electrolytic Capacitor	R92	2410298015	RD14B2E221JF	220 Ohm:5% 1/4W Carbon Resistor
R1, 40	2410310016	RD14B2E681JF	680 Ohm:5% 1/4W Carbon Resistor	R96	2410343012	RD14B2E163JF	16 Kohm:5% 1/4W Carbon Resistor
R2	2410316010	RD14B2E122JF	1.2 Kohm:5% 1/4W Carbon Resistor	R99, 100	2410340419	RD14B2E391JF	390 Ohm:5% 1/4W Carbon Resistor
R3	2410328011	RD14B2E392JF	3.9 Kohm:5% 1/4W Carbon Resistor	R104, 105, 106, 107	2410277010	RD14B2E300JF	30 Ohm:5% 1/4W Carbon Resistor
R4, 5, 19, 20	2410332010	RD14B2E562JF	5.6 Kohm:5% 1/4W Carbon Resistor	P.C Board Control Bracket 3P Connector Pin Ass 4P Connector Base 5P Connector Base 6P Connector Base Rotary Switch Rotary Switch Fo Rotary Switch Lever Switch Low Pass Filter Fuse Holder EP:5870 EP:71321 EP:71325			
R6, 31, 32, 83, 84	2410334018	RD14B2E682JF	6.8 Kohm:5% 1/4W Carbon Resistor				
R11, 12	2410290013	RD14B2E101JF	10 Ohm:5% 1/4W Carbon Resistor				
R13, 14	2410374010	RD14B2E334JF	330 Kohm:5% 1/4W Carbon Resistor				
R15, 16	24102193016	RC05GF2E155KF	1.5 Mohm:10% 1/4W Carbon Resistor				
R17, 18	2410348017	RD14B2E273JF	27 Kohm:5% 1/4W Carbon Resistor				
R21, 22, 35, 36, 37, 38, 45, 69, 70, 79, 80	2410314012	RD14B2E102JF	1 Kohm:5% 1/4W Carbon Resistor				



ETC-81 AUDIO UNIT PARTS LIST

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C1,2	2531053016	CK45E2H103PF	0.01μF 500V Ceramic Capacitor	R23,24,25,26	2410366015	RD1482E154JF	150 Kohm:5% 1/4W Carbon Resistor
C3,7,8,12	25310724016	CK45F1H103ZF	0.01μF 50V Ceramic Capacitor	R27,28,41,77,78	2410362019	RD1482E104JF	100 Kohm:5% 1/4W Carbon Resistor
C4	2544063016	CE04W1E471-F	470μF 50V Electrolytic Capacitor	R29,30	24102530018	RD1482H684JF	680 Kohm:5% 1/2W Carbon Resistor
C5	25440271016	CE04W1E181-F	470μF 18V Electrolytic Capacitor	R33,34	2410293010	RD1482E131JF	130 Ohm:5% 1/4W Carbon Resistor
C6	2544039010	CE04W1V221-F	220μF 35V Electrolytic Capacitor	R39,75,76	2410330012	RD1482E472JF	4.7 Kohm:5% 1/4W Carbon Resistor
C9,10	2544017014	CE04W1C470-F	47μF 16V Electrolytic Capacitor	R42,87,91	2410342013	RD1482E153JF	15 Kohm:5% 1/4W Carbon Resistor
C11,33	2544018019	CE04W1C101-F	100μF 16V Electrolytic Capacitor	R43	2410336016	RD1482E822JF	8.2 Kohm:5% 1/4W Carbon Resistor
C13,14	2544043013	CE04W1HR47-F	0.47μF 50V Electrolytic Capacitor	R44,90	2410346019	RD1482E223JF	22 Kohm:5% 1/4W Carbon Resistor
C15,16	2551103014	C093M1H224MF	0.22μF 250V 50V Plastic Film Capacitor	R46,62,88,95,97	2410358010	RD1482E683JF	68 Kohm 5% 1/4W Carbon Resistor
C17,18,55	2544023017	CE04W1E3R3-F	3.3μF 25V Electrolytic Capacitor	R47	2410270017	RD1482E150JF	15 Ohm:5% 1/4W Carbon Resistor
C19,20,30	2544044012	CE04W1H010-F	1μF 50V Electrolytic Capacitor	R48,101,102	2410340015	RD1482E123JF	12 Kohm:5% 1/4W Carbon Resistor
C31,49,50,57	2544015009	CE04W1A330-F	33μF 10V Electrolytic Capacitor	R49	2410303010	RD1482E361JF	360 Ohm:5% 1/4W Carbon Resistor
C21,22,51,52	2544008016	CE04W1A330-F	33μF 10V Electrolytic Capacitor	R51,52	2412012079	RD1482E513JG	51 Kohm:2% 1/4W Carbon Resistor
C23,24,29	2544055001	CE04W1H2R2-F	2.2μF 50V Electrolytic Capacitor	R53,54	2410347018	RD1482E243JF	24 Kohm:5% 1/4W Carbon Resistor
C25	2544020010	CE04W1C331-F	330μF 16V Electrolytic Capacitor	R55,56	2410349016	RD1482E303JF	30 Kohm:5% 1/4W Carbon Resistor
C26,38	2544031012	CE04W1E471-F	470μF 25V Electrolytic Capacitor	R57,58,68,93	2410323016	RD1482E242JF	2.4 Kohm:5% 1/4W Carbon Resistor
C27	2551088014	C093M1H471JF	0.047μF 200V 50V Plastic Film Capacitor	R59,60	2410326013	RD1482E332JF	3.3 Kohm:5% 1/4W Carbon Resistor
C28	2556091008	C09S1H471JF	470PF:5% 50V Plastic Film Capacitor	R61,94	2410370014	RD1482E224JF	220 Kohm:5% 1/4W Carbon Resistor
C32	2545016010	CA0921ER22MF	0.22μF:20% 25V Aluminum Solid Electrolytic Capacitor	R63,64	2410337015	RD1482E912JF	9.1 Kohm:5% 1/4W Carbon Resistor
C34	2544019018	CE04W1C221-F	220μF 16V Electrolytic Capacitor	R65,66	2410322017	RD1482E222JF	2.2 Kohm:5% 1/4W Carbon Resistor
C35	2533621019	CE45SL1H560JF	56PF:10% 50V Ceramic Capacitor	R67	2410321018	RD1482E202JF	2.0 Kohm:5% 1/4W Carbon Resistor
C36,43,44	2544015012	CE04W1C100-F	10μF 16V Electrolytic Capacitor	R71,72	2410378018	RD1482E474JF	470 Kohm:5% 1/4W Carbon Resistor
C37	2544028012	CE04W1E101-F	100μF 25V Electrolytic Capacitor	R73,74	2410376018	RD1482E384JF	380 Kohm:5% 1/4W Carbon Resistor
C39,40,47,48,53,54	2551130045	C093M1H104JF	0.1μF:5% 50V Plastic Film Capacitor	R81,82	2410341014	RD1482E133JF	13 Kohm:5% 1/4W Carbon Resistor
C41,42	2554076009	C092P2A102G	0.001μF:2% 100V Plastic Film Capacitor	R85,98,103	2410338014	RD1482E103JF	10 Kohm:5% 1/4W Carbon Resistor
C58	2551130003	C093M1H473JF	0.047μF:5% 50V Plastic Film Capacitor	R86	2410318018	RD1482E152JF	1.5 Kohm:5% 1/4W Carbon Resistor
C59,60	2545020019	CA92F1E010MF	1μF:20% 25V Aluminum Solid Electrolytic Capacitor	R89	2410294019	RD1482E151JF	150 Ohm:5% 1/4W Carbon Resistor
C63,64	2551120026	C093M1H152JF	0.0015μF:5%50V Plastic Film Capacitor	R92	2410298019	RD1482E221JF	220 Ohm:5% 1/4W Carbon Resistor
C65,66	2544015009	CE04W1C100-F	10μF 16V Electrolytic Capacitor	R96	2410343012	RD1482E163JF	16 Kohm 5% 1/4W Carbon Resistor
R1,40	2410310016	RD1482E681JF	680 Ohm:5% 1/4W Carbon Resistor	R99,100	2410304019	RD1482E391JF	390 Ohm 5% 1/4W Carbon Resistor
R2	2410316010	RD1482E122JF	1.2 Kohm:5% 1/4W Carbon Resistor	R104,105,106,107	2410277010	RD1482E300JF	30 Ohm 5% 1/4W Carbon Resistor
R3	2410328011	RD1482E392JF	3.9 Kohm:5% 1/4W Carbon Resistor				
R4,5,19,20	2410332010	RD1482E562JF	5.6 Kohm:5% 1/4W Carbon Resistor				
R6,31,32,83,84	2410334018	RD1482E682JF	6.8 Kohm:5% 1/4W Carbon Resistor				
R11,12	2410290013	RD1482E101JF	10 Ohm:5% 1/4W Carbon Resistor				
R13,14	2410374010	RD1482E334JF	330Kohm:5% 1/4W Carbon Resistor				
R15,16	2410193016	RC05GF2E156KF	1.5 Kohm:5% 10K 1/4W Carbon Resistor				
R17,18	2410348017	RD1482E273JF	27 Kohm:5% 1/4W Carbon Resistor				
R21,22,35,36,37,38,45,69,70,79,80	2410314012	RD1482E102JF	1 Kohm:5% 1/4W Carbon Resistor				

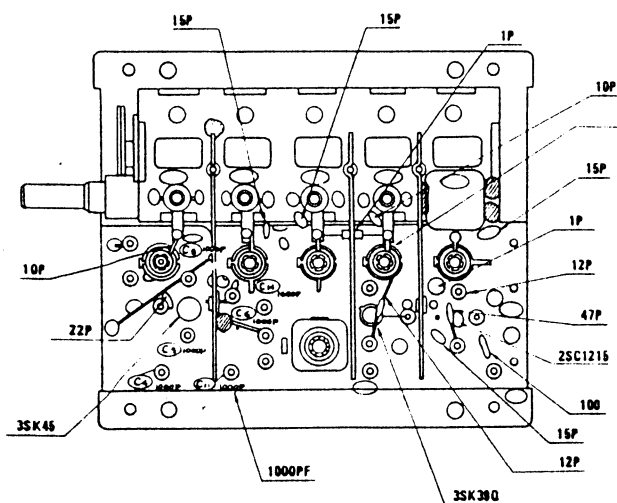
Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
IC1	2630062002	HA-1196	Integrated Circuit	D5,6,7,8	2760002029	IN60	Diode
FET1,2	2750007021	2SK 40 (C)	Field Effect Transistor	D9	2760049011	IS 2076A	Diode
TR1	2740043008	2SD 476 (C)	Transistor	RL1	2140015005	Reed Relay	Diode
TR2,7,8,9,10	2730116013	2SC 1345 (E)	Transistor	VR1,2	EP-5462H15	Solid Volume	8-22 Kohm Variable Resistor
TR3	2730111021	2SC 1213 (C)	Transistor	VR3,4	EP-5462H11	Solid Volume	8-4.7 Kohm Variable Resistor
TR4	2730021030	2SC 458 (C)	Transistor	VR5	EP-5462H13	Solid Volume	8-10 Kohm Variable Resistor
TR5,6	2730021043	2SC 458 (D)	Transistor	VR6	EP-5462H23	Solid Volume	8-470 Kohm Variable Resistor
TR12,13	2710063005	2SA 836 (D)	Transistor	RB1,2	2462001001	RK923-28	Resistor Block
D1,2,3	2760166017	RA-1Z	Diode	RB3,4	2462002000	RK924-28	Resistor Block
D4	2760178005	MZ 3128	Diode		2062008006	AC Cord With Plug	For Australia

GE-0005-1 CHASSIS & CABINET GROUP

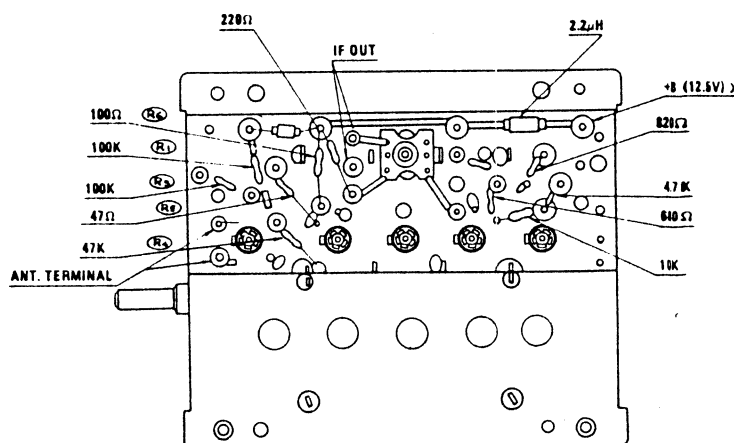
Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
	1020022038	Top Cover	For Top Cover, Bottom Cover	2150016117	Level Meter (L) Ass	Meter Select Indicator Lamp	
	4770064107	Fixing Screw		3939007201	P.C. Board	For Stereo Indicator Lamp	
	1050089106	Bottom Cover Ass		2220196006	P.C. Board	Stereo Indicator Lamp	
	1440152203	Front Panel Ass		3930024001	P.L. 5.3V 0.075A	For Stereo Indicator Lamp	
	1220076104	Tuning Knob Ass		2034080081	3P Connector Cord	For Level Meter (R), (L) Ass, Tuning Meter	
	1120078102	Function Knob Ass		2220212100	P.C. Board	For Level Meter (R), (L) Drum, Tuning	
	1120080103	Knob Ass	External Att. Meter Selector	3930026008	P.L. 8V 0.2A	Meter Illumination	
	1130034000	Lever Knob	For Power, Muting, High Blend Switch				
	1190005011	Blind Sheet	For Lever Knob	2150015105	Tuning Meter Ass	For Drum Lamp	
	4100051308	Dial Chassis Ass		2220213002	P.C. Board	For AC line Fuse	
	4210119004	Guide Wheel		2020012005	Fuse Holder	AC Line Fuse	
	SC-1161	Tapping Screw	For Guide Wheel	2061015003	Fuse 0.5A (Time Lag)		
	MD-0131J	Guide Wheel		2062002002	AC Cord With Plug		
	4200063109	Driving Shaft Ass		4450020005	Cord Bush		
	4100060205	G.W. Bracket (A) Ass		2050019201	4P Terminal	Antenna Terminal	
	4100061107	G.W. Bracket (C) Ass		4714304030	3 x 8 CTS	For Antenna Terminal	
	4220068103	Dial Shaft		EP-71141	Push Terminal	For Speaker Terminal	
	WA-0733	Spacer		2335026003	Power Trans Ass		
	4210024209	Drum Wheel		2160009004	FM Front End Ass		
	WA-0728	E-Ring		4730356033	3 x 12 CRTS (2)	For Front End	
	4756013004	6N		4430113000	Star	For Front End	
	S-2680	Tension Spring		2042009009	4P Connecting Base	Out Put Terminal	
	4230011001	String	ø0.55 Tension	E-9843H	Fix Plate	For Out Put Terminal	
	4520022001	Dial Drum		2040052003	3P Connector base	Det Out, Multi Path, Out Put Terminal	
	4210023200	Dial Wheel		2110087005	V2420N10SA503	A-50 Kohm Level Adjust	
	4110071404	Front Chassis Ass		2032055006	Coaxial Connector	75 Ohm Antenna Connector	
	4140063000	Blind		2310017008	Balun Trans		
	4110056306	IF Chassis		2034083004	3P Connector Cord	For Front End	
	4732355032	3 x 10 CFTS (2)		2034084003	3P Connector Cord	For Det Out, Multi Path	
	4510010007	Lamp Bracket		2034084003	3P Connector Cord	For Ext In Put Terminal	
	4510011103	Reflector Bracket		2034080052	3P Connector Cord	For Level Meter (R), (L), Tuning Meter Drum, Lamp	
	1020037104	Back Cover		2034080065	3P Connector Cord	For Tuning Meter	
	4530006004	Filter (A)	Blue Collar Filter For Level Meter (R), (L), Tuning Meter Illumination	2036041015	4P Connector Cord	For Level Meter (R), (L)	
			Blue Collar Filter	2038035016	5P Connector Cord	For A-50 Kohm Level Adjust	
			For Drum Illumination	2040031024	6P Connector Cord	For Out Put Terminal	
	4530007003	Filter (B)		MD-4368			
	4610066139	Rubber Sheet		2124047002	Slide Switch	Voltage Selector	
	4610066126	Rubber Sheet		4120297003	Bracket	For Voltage Selector	
	1460027103	Dial Window (C) Ass		CP05C-AC103MC		0.01μF ±20%, 450VAC Oil Capacitor	
	2124072006	Lever Switch	For Power Switch	2518001007		For Power Switch	
	2150016104	Level Meter (R) Ass				1.5 Ohm ±5% 2W Metal Oxide Resistor	
				C1,2			
				R1	2440064002	RS1483D1R5JNB	

THE VIEW OF THE FRONT END (216000904)

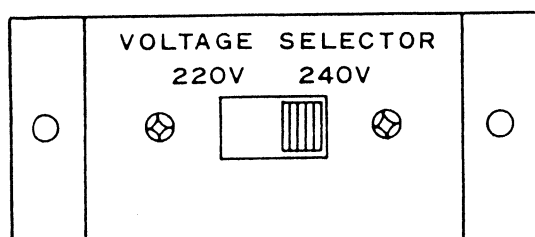
TOP VIEW



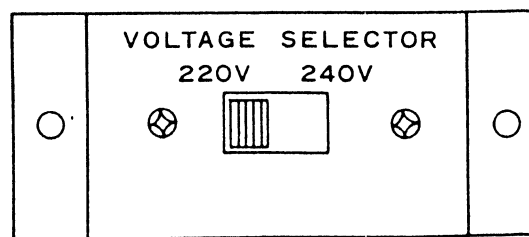
BOTTOM VIEW



VOLTAGE CHANGEROVER



FOR 240V OPERATION



FOR 220V OPERATION

METHOD OF ADJUSTMENTS

STEP	ITEM	TUNER DIAL SETTING	SIGNAL GENERATOR					INDICATOR		ADJUST	ADJUST LIMITS	REMARKS
			TYPE	FREQ	TUNER INPUT LEVEL	MODULATION	COUPLING	TYPE	CONNECTED TO			
1.	IF	98MHz	FM SG	98MHz	60dB/ μ V	CW	Through dummy ant. to 300 ohms ant. terminals	Signal strength meter		Top (sec.) and bottom (pri.) of T101 on front end unit. (2160009004)	Maximum signal strength meter	In following adjustments, specification of FM signal generator & stereo modulator have to warrant less than 0.1% distortion and more than 50dB stereo separation at 1 kHz.
2.	Detector	Point of no interference & station	Same		Received FM noise		Same	Tuning meter		Top (sec.) of T201 on IF unit (HUX-003A)	Center point of tuning meter	
3.	Dial calibration	108MHz	Same	108MHz	60dB/ μ V	400Hz \pm 75kHz deviation	Same	Same		OSC. trimmer Tc105 on front end unit (2160009004)	Same	
4.	Same	88MHz	Same	88MHz	Same	Same	Same	Same		OSC. coil L105 on front end unit (2160009004)	Same	Repeat step 3 and 4, until dial indicates within \pm 50kHz at 88MHz and 108MHz. Also check accuracy of other frequency reading.
5.	Tracking	108MHz	Same	108MHz	Same	Same	Same	Signal strength meter		Tc, 101, 102, 103, 104 on front end unit (2160009004)	Maximum signal strength meter	
6.	Same	88MHz	Same	88MHz	Same	Same	Same	Same		L101, 102, 103, 104 on front end unit (2160009004)	Same	
7.	Monaural distortion	Same	Same	98MHz	Same	1000Hz \pm 75kHz deviation	Same	Distortion meter A.C. V.M. oscilloscope	Fixed output R-channel	Bottom (pri.) of T201 on IF unit (HUX-003A)	Minimum distortion	1.13V.
8.	Audio output level	Same	Same	Same	Same	400Hz \pm 75kHz deviation	Same	Same	Same	VR.202 on IF unit (HUX-003A)	1.13V.	
9.	Same	Same	Same	Same	Same	Same	Same	Same	Fixed output L-channel	VR.307 on Audio unit (ETC-81A)	1.13V.	

STEP	ITEM	TUNER DIAL SETTING	SIGNAL GENERATOR					INDICATOR		ADJUST	ADJUST LIMITS	REMARKS
			TYPE	FREQ	TUNER INPUT LEVEL	MODULATION	COUPLING	TYPE	CONNECTED TO			
10.	P.L.L. 19kHz	Same	Same	Same	Same	Same	Same	Frequency counter	TP301	VR.305 on Audio unit (ETC-81A)	76kHz \pm 100Hz.	IF distortion is more than reading of 0.2%, turn top (sec.) and bottom (pri.) of T101 on front end unit (2160009004) to obtain reading of 0.15%.
11.	Stereo distortion	Same	FM SG and stereo modulator	Same	Same	Stereo modulation L-channel \pm 33.75 kHz deviation pilot \pm 7.5 kHz deviation	Same	Distortion meter A.C. V.M. oscilloscope	Fixed output L-channel	VR.201 on IF unit (HUX-003A)	Minimum distortion	
12.	Stereo separation	98MHz	FM SG. and stereo modulator	98MHz	60dB/ μ V	Stereo modulation L or R-channel \pm 33.75 kHz deviation Pilot \pm 7.5 kHz deviation	Through dummy ant. to 300 ohms ant. terminals	Distortion meter A.C.V.M. oscilloscope	Fixed output L or R-channel	VR.306 on Audio unit (ETC-81A)	Maximum separation	
13.	Muting coil	98MHz	Same	98MHz	20dB/ μ V	400Hz \pm 75kHz deviation	Same	Signal strength meter		Top (sec.) and bottom (pri.) of T202 on IF unit (HUX-003A)	Maximum signal strength meter	Set muting switch to "ON" and VR.204 to minimum counter clockwise position and then turn VR.204 slowly in clockwise direction until audio output is obtained.
14.	Muting Trigger level	Same	Same	Same	Same	Same	Same	L or R-channel level meter		VR.204 on IF unit (HUX-003A)	Trig. on audio output	
15.	Signal strength meter	Same	Same	Same	60dB/ μ V.	400Hz 22.5kHz deviation	Same	Signal strength meter		VR.203 on IF unit (HUX-003A)	0dB point	Turn to obtain reading of 0dB (100%) on the signal strength meter.
16.	Level meter		Audio 1,000Hz oscillator		0.775V		L and R-channel external input terminals	L and R-channel level meter		VR.303 and VR.304 on AUDIO unit (ETC-81A)	Adjust for 0dB both channels	Set meter selector switch to "External" and external att. to 0dB position.
17.	Tuner output level setting	98MHz	FM SG.	98MHz	60dB/ μ V	400Hz \pm 75kHz deviation	Through dummy ant. to 300 ohms ant. terminals	L and R-channel level meter		VR.301, and VR.302 on AUDIO unit (ETC-81A)	Adjust for +2.3dB both channels	Set meter selector switch to "Level"



